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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

DETAILED ACTION

Status of Claims:

Claims 1-2, 4-8, 10-14, and 16-18 are pending in this Office Action.

Claims 1, 7, 8, 10-13, and 18 are amended.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2, 4-8, 10-14, and 16-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wu (US 5,185,860 A) in view of Ford et al. (US 6,101,499 B2) hereinafter Ford.

Claim 1

Wu teaches a name resolution device for managing a name of each node which is connected to a network and whose position on the network can be changed and an address for identifying each node, comprising:

a node information storing unit configured to store a node information containing a name of a node, a network identification information, an interface identification information of a node, for each node ([Wu] Column 5 Lines 58-60, “Block 604 then initializes the database used to permanently store the nodes);

a node information collecting unit configured to collect the node information of other nodes connected to the network, through the network ([Wu] Column 5 Lines 35-41, “Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed”).

Wu fails to teach a prefix indicating a position of a node on the network; a node information updating unit configured to update the node information stored in the node information storing unit, according to the node information of the other nodes collected by the node information collecting unit, by updating the prefix stored in the node information storing unit by using the interface identification information contained in the node information collected by the node information collecting unit as a key; a function conversion unit configured to convert the interface identification information corresponding to a prescribed node among the node information stored in the node information storing unit, by using a one way function; a comparing unit configured to compare the interface identification information converted by using the one way function which is received from another node, with the interface identification information as converted by the function conversion unit; and a node information providing unit configured to provide the prefix corresponding to the interface identification information compared by the comparing unit to the another node, but without the interface identification information, only when it is judged that the converted interface identification information from the function conversion unit coincides with the converted interface identification information from the another node at the comparing unit.

However, Ford teaches “A method and computer product for automatically generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment. First, a proposed IP address is generated by selecting a network identifying portion (sometimes known as an IP network prefix) while deterministically generating the host identifying portion based on information available to the IP host. For example, the IEEE 802 Ethernet address found in the network interface card may be used with a deterministic hashing function to generate the host identifying portion of the IP address. Next, the generated IP address is tested on the network to assure that no existing IP host is using that particular IP address. If the generated IP address already exists, then a new IP address is generated, otherwise, the IP host will use the generated IP address to communicate over the network. While using the generated IP address, if an IP address server subsequently becomes available, the host will conform to IP address server protocols for receiving an assigned IP address and gradually cease using the automatically generated IP address” (Abstract) in order to “allow hosts to connect to an IP network in a simple fashion” and “reduce the expertise needed by a user connecting an IP host to an IP network” (Column 3 lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time to create the invention of Wu to include a “method and computer product for automatically generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment” as taught by Ford in order to “allow hosts to connect to an IP network in a simple

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fashion" and "reduce the expertise needed by a user connecting an IP host to an IP network" (Column 3 lines 1-5).

Claim 2

The modified Wu teaches the name resolution device of claim 1, wherein the node information updating unit updates the node information stored in the node information storing unit for which the interface identification information coincides with that of the node information collected by the node information collecting unit but title prefix does not coincide with that of the node information collected by the node information collecting unit ([Wu] **Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record"**).

Claim 4

The modified Wu teaches the name resolution device of claim 1, wherein the function conversion unit uses a hash function as the one way function ([Wu] **Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list"**).

Claim 5

The modified Wu teaches the name resolution device of claim 1, farther comprising:
a prefix conversion unit configured to convert the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the node information storing unit stores the position identification information obtained by the prefix conversion unit, as the prefix ([Wu] Column 9 Lines 7-11, “**Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address**”).

Claim 6

The modified Wu teaches the name resolution device of claim 1, further comprising:
an address generation unit configured to generate an IPv6 address dynamically, according to the node information stored in the node information storing unit ([Wu] Column 10 Lines 40-43, “**FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses**”).

Claim 7

Wu teaches a name resolution method for managing a name of each node which is connected to a network and whose position on the network can be changed, and an address for identifying each node, comprising:

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storing a node information containing a name of a node, a network identification information, an interface identification information of a node, for each node ([Wu] Column 5 Lines 58-60, “Block 604 then initializes the database used to permanently store the nodes);

collecting the node information of other nodes connected to the network, through the network ([Wu] Column 5 Lines 35-41, “Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed”).

Wu fails to teach a prefix indicating a position of a node on the network; updating the node information stored by the storing, according to the node information of the other nodes collected by the collecting, by updating the prefix stored by the storing by using the interface identification information contained in the node information collected by the collecting as a key; converting the interface identification information corresponding to a prescribed node among the node information stored by the storing step, by using a one way function; comparing the interface identification information converted by using the one way function which is received from another node but without the interface identification information, with the interface identification information as converted by the converting step; and providing the prefix corresponding to the interface identification information compared by the comparing step to the another node, only when it is judged that the converted interface identification information coincides with the converted interface identification information from the another node at the comparing step.

However, Ford teaches “A method and computer product for automatically generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment. First, a proposed IP address is generated by selecting a network identifying portion (sometimes known as an IP network prefix) while deterministically generating the host identifying portion based on information available to the IP host. For example, the IEEE 802 Ethernet address found in the network interface card may be used with a deterministic hashing function to generate the host identifying portion of the IP address. Next, the generated IP address is tested on the network to assure that no existing IP host is using that particular IP address. If the generated IP address already exists, then a new IP address is generated, otherwise, the IP host will use the generated IP address to communicate over the network. While using the generated IP address, if an IP address server subsequently becomes available, the host will conform to IP address server protocols for receiving an assigned IP address and gradually cease using the automatically generated IP address” (Abstract) in order to “allow hosts to connect to an IP network in a simple fashion” and “reduce the expertise needed by a user connecting an IP host to an IP network” (Column 3 lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time to create the invention of Wu to include a “method and computer product for automatically generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment” as taught by Ford in order to “allow hosts to connect to an IP network in a simple

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fashion" and "reduce the expertise needed by a user connecting an IP host to an IP network" (Column 3 lines 1-5).

Claim 8

The modified Wu teaches the name resolution method of claim 7, wherein the updating updates the node information stored by the storing for which the interface identification information coincides with that of the node information collected by the collecting but the prefix does not coincide with that of the node information collected by the collecting ([Wu] **Column 8 Lines 25-32, "each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record"**).

Claim 10

The modified Wu teaches the name resolution method of claim 7, wherein the converting uses a hash function as the one way function ([Wu] **Column 9 Lines 5-7, "Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list"**).

Claim 11

The modified Wu teaches the name resolution method of claim 7, further comprising:

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converting the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the storing stores the position identification information obtained by the converting, as the prefix ([Wu] Column 9 Lines 7-11, “**Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address**”).

Claim 12

The modified Wu teaches the name resolution method of claim 7, further comprising: generating an IPv6 address dynamically, according to the node information stored by the storing ([Wu] Column 10 Lines 40-43, “**FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses**”).

Claim 13

Wu teaches a computer-readable medium having computer-executable instructions for performing a method for causing a computer to function as a name resolution device for managing a name of each node which is connected to a network and whose position on the network can be changed, and an address for identifying each node, the method comprising:

storing a node information containing a name of a node, a network identification information, and an interface identification information of a node, for each node ([Wu] Column 5 Lines 58-60, “**Block 604 then initializes the database used to permanently store the nodes**);

collecting the node information of other nodes connected to the network, through the network ([Wu] Column 5 Lines 35-41, “Referring now to FIGS. 3 through 5, discovery module 302 is the main module of the system. Discovery calls self-seed block 304 to start the process of building a database about the network, and it calls process-node block 306 to process information about each node that it obtained from self-seed”).

Wu fails to teach a prefix indicating a position of a node on the network; updating the stored node information, according to the collected node information of the other nodes, by updating the stored prefix using the interface identification information contained in the collected node information as a key; converting the interface identification information corresponding to a prescribed node among the stored node information, by using a one way function; comparing the interface identification information converted by using the one way function which is received from another node, but without the interface identification information, with the converted interface identification information; and providing the prefix corresponding to the compared interface identification information to the another node, only when it is judged that the converted interface identification information from the function conversion unit coincides with the converted interface identification information from the another node when comparing.

However, Ford teaches “A method and computer product for automatically generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment. First, a proposed IP address is generated by selecting a network identifying portion (sometimes known as an IP network prefix) while deterministically generating the host identifying portion based on information available to the IP host. For

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example, the IEEE 802 Ethernet address found in the network interface card may be used with a deterministic hashing function to generate the host identifying portion of the IP address. Next, the generated IP address is tested on the network to assure that no existing IP host is using that particular IP address. If the generated IP address already exists, then a new IP address is generated, otherwise, the IP host will use the generated IP address to communicate over the network. While using the generated IP address, if an IP address server subsequently becomes available, the host will conform to IP address server protocols for receiving an assigned IP address and gradually cease using the automatically generated IP address” (Abstract) in order to “allow hosts to connect to an IP network in a simple fashion” and “reduce the expertise needed by a user connecting an IP host to an IP network” (Column 3 lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time to create the invention of Wu to include a “method and computer product for automatically generating an IP network address that facilitates simplified network connection and administration for small-scale IP networks without IP address servers, such as those found in a small business or home network environment” as taught by Ford in order to “allow hosts to connect to an IP network in a simple fashion” and “reduce the expertise needed by a user connecting an IP host to an IP network” (Column 3 lines 1-5).

Claim 14

The modified Wu teaches the computer-readable medium of claim 13, wherein the updating includes updating the stored node information for which the interface identification information coincides with that of the collected node information but the prefix does not coincide

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with that of the collected node information (([Wu] Column 8 Lines 25-32, “each IF table entry will have a corresponding IP table entry, and the IP entry is referenced by an index value contained in the IF entry. Block 1204 then determines whether a matching IP record exists. If a matching IP record does exist, block 1204 transfers to block 1206 which moves the physical address from the IP record to the node record in the node list. Block 1208 then updates any state information in the node record”).

Claim 16

The modified Wu teaches the computer-readable medium of claim 13, wherein the converting uses a hash function as the one way function (([Wu] Column 9 Lines 5-7, “Referring now to FIG. 15, after entry, block 1502 performs a hash operation on the IP address to create a pointer into the node list”).

Claim 17

The modified Wu teaches the computer-readable medium of claim 13, further comprising:

converting the prefix into a position identification information which is in one-to-one correspondence to the prefix; wherein the storing includes storing the converted position identification information as the prefix (([Wu] Column 9 Lines 7-11, “Block 1504 then allocates memory for a node record, and block 1506 stores the data available for the node into the node record at the location pointed to by the hashed IP address”).

Claim 18

The modified Wu teaches the computer-readable medium of claim 13, further comprising:

generating an IPv6 address dynamically, according to the stored node information (([Wu] **Column 10 Lines 40-43, “FIG. 10 shows a flowchart of the process-IFIP module block 310 (FIG. 3). The IF and IP tables are available in a node to define the translation of physical addresses to IP addresses”**)).

Response to Arguments

3. Applicant's arguments with respect to claims 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to FARHAD ALI whose telephone number is (571)270-1920. The examiner can normally be reached on Monday thru Friday, 7:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey C. Pwu can be reached on (571) 272-6798. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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